

CLAIMS

1. Filter unit for filtering particles contained in the exhaust gases of an internal combustion engine, comprising interleaved sets of adjacent inlet passages (10, 11) and outlet passages (12, 13) in fluid communication through their lateral walls, said unit including a set of lateral wall portions (16₁-16₈) forming an intermediate wall (15) between inlet passages (10, 11) and outlet passages (12, 13) and having, in cross section, an undulation determined to increase the overall volume of said inlet passages (10, 11) at the expense of that of the outlet passages (12, 13), and the overall volume (V_e) of said inlet passages (10, 11) being greater than that (V_s) of said outlet passages (12, 13), characterized in that:
 - the hydraulic diameter of said outlet passages (12, 13) is from 0.9 to 1.4 mm,
 - the ratio r of the overall volume (V_e) of the inlet passages (10, 11) to the overall volume (V_s) of the outlet passages (12, 13) is from 1.15 to 4,
 - the filtering area is from 0.825 m² to 1.4 m² per liter of said filter unit,
 - the ratio of asymmetry of said undulation is less than 20%.
2. Filter unit according to claim 1, characterized in that the hydraulic diameter of said outlet passages (12, 13) is greater than 0.95 mm.
3. Filter unit according to either claim 1 or claim 2, characterized in that said ratio r is greater than 1.35.
4. Filter unit according to any one of the preceding claims, characterized in that said ratio r is less than 3.
5. Filter unit according to any one of the preceding claims, characterized in that the filtering area is greater than 0.92 m² per liter of said filter unit.
6. Filter unit according to any one of the preceding claims, characterized in that said outlet passages (12, 13) have a cross section of constant area throughout the length (L) of said filter unit.
7. Filter unit according to any one of the preceding claims, characterized in that said inlet passages (10, 11) and outlet passages (12, 13) are straight and parallel.
8. Filter unit according to any one of the preceding claims, characterized in that said inlet passages (10, 11) and outlet passages (12, 13) are arranged relative to each other so that all of the gas filtered by any inlet passage (10, 11) passes into outlet passages (12, 13) adjacent said inlet passage (10, 11).
9. Filter unit according to any one of the preceding claims, characterized in

that the ratio of asymmetry of said undulation is less than 15%.

10. Filter unit according to any one of the preceding claims, characterized in that the ratio of asymmetry of said undulation is less than 12%.

5 11. Filter unit according to any one of the preceding claims, characterized in that the ratio of asymmetry of said undulation is greater than 5%.

12. Filter unit according to any one of the preceding claims, characterized in that said undulation is periodic and a half-period of said undulation extends over the width of one of said channels (10, 11, 12, 13).

10 13. Filter unit according to any one of the preceding claims, characterized in that said undulation has a sinusoidal shape in cross section.

14. Filter body intended for a particle filter, characterized in that it includes at least one unit according to any one of the preceding claims.